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Gold, friction and resistance in a globalised land system: the case of Tanzania

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ABSTRACT

In land system science (LSS), the globalisation of land use is often understood via trade flows. Fewer studies have explored the power asymmetries and local resistance that shape global connections. Consequently, calls for a deeper engagement with power and agency have been made within LSS. To accommodate this, we engage the ethnographic literature on encounters, emphasising the concepts of resistance and friction. These capture the ways actors position themselves in global systems, resist, and create global connections. To illustrate its relevance for land systems, we use qualitative data from the mining sector of Tanzania, highlighting the emergence of resource nationalism as an alternative form of globalisation (alter-globalisation). We argue that a focus on resistance, friction and alter-globalisation can move LSS towards a deeper engagement with power and agency in global flows, revealing the competing actors, values and visions embedded in land systems.

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1. Introduction

Global production, consumption and trade of land-based products are more spatially fragmented than ever, increasingly connecting distal regions (Godar & Gardner, 2019). From the early 2000s, it has been a prominent research agenda to identify and explore this connectivity within the field of land system science (LSS; Geist & Lambin, 2002; Lambin & Geist, 2006). LSS has approached land-use and land-cover change as part of coupled human-environment systems, which are increasingly embedded in global flows of food, fibre and energy that connect people and places (Lambin & Meyfroidt, 2011; Meyfroidt et al., 2013). This has enabled scholars to identify distal drivers, leakages, displacements and feedback mechanisms of land-use change (Liu et al., 2013), and to show the importance of approaching land-use systems as open systems connected over distance and across scales (Carlson et al., 2018; Friis & Nielsen, 2019; Meyfroidt et al., 2013). Within LSS, much attention has been given to global linkages in agricultural systems (Friis & Nielsen, 2017; Garrett & Rueda, 2019; Grau & Aide, 2008; Van Vliet et al., 2015; Verburg et al., 2013), deforestation and forest transition (Jadin et al., 2016; Meyfroidt & Lambin, 2009; Meyfroidt et al., 2010) and conservation (Andriamihaja et al., 2019; Boillat et al., 2018; Kuemmerle et al., 2019; Llopis et al., 2021).

Despite this focus on the globalisation of land use, LSS struggles with capturing and representing the asymmetrical historical, political and economic relations and social inequalities that also shape global land systems (Challies et al., 2014; Friis et al., 2016; Niewöhner et al., 2016). One point of critique raised in recent years has been that much of LSS research relies on neo-classical economics

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for understanding global connectivity (Munroe et al., 2014). This has led to an emphasis on economic relations and trade flows as the drivers of land-use change, while approaching globalisation as an external force on which local agents have only limited influence. As a consequence, other types of relations, including cultural and historical contexts in which power asymmetries and inequalities are shaped and come to characterise land systems, have received far less attention (Ehrensperger et al., 2019; Munroe et al., 2014; Le Polain de Waroux et al., 2021). This also includes the colonial legacies that continue to mould globalised trade patterns (Infante-Amate & Krausmann, 2019), land use (Becker, 2001; Boillat et al., 2020) and environmental knowledge production (Álvarez & Coolsaet, 2020).

In particular, the limited focus on power and agency in LSS has manifested in preconceived notions of producer countries having less agency than consumer countries (Friis et al., 2016). Yet, global relations are rarely that simple, nor unidirectional, as people are not just objects of colonialism, capitalism, neoliberalism and globalisation (Nevins & Peluso, 2018a). Global land-use connections also include dissent, contest and conflict (Niewöhner et al., 2016; Peluso & Watts, 2001).

To address this issue, LSS scholars have called for a deeper theoretical engagement with social science perspectives on power and agency, resistance and conflict (Eakin et al., 2014; Friis et al., 2016; Grau et al., 2013; Niewöhner, Nielsen et al., 2016), and with more empirical studies on the multi-directional and complex power relations between consumer and producer countries (Friis et al., 2016). Such engagements might give insights into how actors position themselves and are positioned in global systems, why they create, maintain or break certain connections, and who or what has power to initiate and control land use changes in a globalised world (Messerli et al., 2013; Niewöhner et al., 2016). In this paper, we take up the call for a deeper engagement with power relations and agency in LSS and argue that the ethnographies of encounter (Faier & Rofel, 2014; Tsing, 2005) are particularly relevant for this, as they shed light on the power relations and forms of agency at play in global land systems. The ethnographies of encounter highlight how the encounters between people, places, scales and structures that make up human-environment interactions and shape globalisation are wrought with dynamic, frictional, multi-directional and contingent power relations (Faier & Rofel, 2014; Ouma, 2015; Peluso & Watts, 2001; Tsing, 2005). Thereby, the ethnographies of encounter engage a relational and non-endogenous approach to power as generative (Bear et al., 2015; Tsing, 2005). While there is a tendency in human-environment research to emphasise either structural or agency-based power aspects (Svarstad et al., 2018), and an aim to overcome the structure-agency dichotomy in empirical analysis (Roy Chowdhury & Turner, 2006), this relational and open conceptualization of power can bring together the multiple, yet often disjointed power approaches in human-environment research (Clark & Harley, 2020). An open approach to power enables a broad engagement with its different dimensions, without confining these to a fixed framework.

In the ethnographies of encounter, structures are powerful but not predetermined (Bear et al., 2015; Tsing, 2005), and rather than being an external force, globalisation is an outcome of multiple, frictional encounters, unfolding in ways that impact people differently (Tsing, 2005), skips places (Ferguson, 2006), generates inequalities across space (Faier & Rofel, 2014), and is resisted (Ayres & Bosia, 2011). Consequently, alternative visions of globalisation – so-called alter-globalisations (Bakker, 2007; Gills, 2004) – often emerge from these processes. Work focusing on local resistance to dominant global trends captures this frictional and contested nature of globalisation, while offering an entry point for exploring power relations (Ayres & Bosia, 2011; Coleman & Tucker, 2011; Gills, 1997; Ong, 2010). A focus on resistance and frictions between actors embedded in the same global trends can thus reveal these multiple and competing globalisations at play (Gills, 1997, 2004). We therefore argue that the concepts of resistance, friction and alter-globalisation offer particularly relevant entry points for advancing the LSS approach to global connectivity in land systems. Furthermore, these concepts enable a deeper engagement with the multidirectionality of power and agency in globalised land systems, allowing us to explore how power relations shape

global land systems. Resistance, friction and alter-globalisation should not replace existing LSS approaches. Rather, we hope that they can work alongside these to expand the engagement with complex, multi-scalar and competing power dimensions in land systems.

We use the case of gold mining in Tanzania to illustrate this relevance. Mining is a land use that has largely been overlooked in LSS as its land cover is relatively small compared to, for example, forestry and agriculture. Yet, it has immense direct and indirect effects on land-cover change and land-use competition, as well as far-reaching social-ecological consequences (Sonter et al., 2014; Telmer & Veiga, 2009). The mining sector is characterised by widespread power asymmetries, particularly in Sub-Saharan Africa (Gilberthorpe & Rajak, 2017), and it is a contested sector where global connections are benefitting some actors and places, while harming others (Ferguson, 2006; Watts, 2004). Understanding the dynamics and effects of mining as a land-use system thus requires explicit attention to the various actors and places that shape it, and highlights the strengths of engaging with resistance, frictions and alter-globalisations when assessing the implications of global land use.

To unfold our argument, we start with a brief introduction to the literature on resistance, friction and alter-globalisations apt for accommodating the calls for a larger engagement with agency and power in LSS. We then introduce the methodology, before presenting the results from the case of gold mining in Tanzania. Here, we illustrate how frictions and resistance have shaped global connections in the sector and highlight the emergent trend of resource nationalism. We illustrate how resource nationalism is not merely an anti-globalisation movement but rather a form of alter-globalisation, as national and local actors seek to position themselves in new ways in the global gold system. Subsequently, we discuss the importance of a LSS research agenda attentive to resistance, friction and alter-globalisations in globalised land systems. We conclude that such a focus will help LSS to explore power asymmetries, contested globalisations, benefit distributions and normative land issues.

2. Resistance and friction in the globalisation of land use

Within LSS (Boillat et al., 2018; Meyfroidt et al., 2013; Le Polain de Waroux, 2019; Schaffartzik & Kastner, 2019) and beyond (Li, 2014; Nevins & Peluso, 2018b; Ouma, 2015; Roccu & Talani, 2019; Werner & Bair, 2019), scholars have documented how global land systems can be socially, economically and environmentally harmful. This has spurred LSS to increasingly engage with the challenge of identifying leverage points for sustainable governance of global land use. Doing so, scholars have focused on the need for polycentric governance (Oberlack et al., 2018), hybrid public-private interventions (Bager et al., 2021; Lambin et al., 2014) and flow based governance such as certification schemes (Garrett et al., 2016; Sikor et al., 2013; Verburg et al., 2015). Indeed, a turn towards a more solution oriented LSS has gained traction (Verburg et al., 2015). This has also invoked a debate on normativity and the need for approaching LSS as a science *for* sustainability (Nielsen, Bremond et al., 2019). Yet, LSS often deals with 'wicked' problems that entail trade-offs and these are difficult to solve in ways that benefit all actors (DeFries & Nagendra, 2017; Meyfroidt, 2018). To create more just and sustainable land-use solutions, it is thus important to identify the winners and losers in global land systems (Nielsen, Bremond et al., 2019) and understand the power relations and agency that shape them (Boillat et al., 2020; Friis et al., 2016; Messerli et al., 2013).

To improve the engagement with power relations in land systems, scholars have, for example, turned to political ecology (Brannstrom & Vadjunec, 2014). Power in political ecology is conceptualised mainly with reference to agency-oriented, neo-Marxist and Foucauldian approaches (Svarstad et al., 2018). Agency-oriented approaches conceptualise power as being exercised by actors with emphasis on negotiation, intentionality and decision-making (Svarstad et al., 2018). In contrast, societal structures are in focus in a neo-Marxist conceptualisation of power. Social structures are powerful, historical constructs that constrain the agency of the individual (Svarstad et al., 2018). In the Foucauldian approach, discourse is emphasised as a way of exercising power, using and

producing knowledges and ‘truths’ that can persuade groups or individuals to act in certain ways (Foucault, 1986). Each conceptualisation contributes to the understanding of power in land systems. Yet, adhering to one approach risks undermining the complex relations between agency, structure and discourse (Svarstad et al., 2018). The multiple and often disjointed approaches to power reflect a general struggle in the sustainability sciences of conceptualising the manifold expressions of power in human-environment systems (Clark & Harley, 2020).

Contributing to this field of inquiry, we suggest a deeper engagement with the ethnographies of encounter, focusing on the interactive, contingent and multi-directional dynamics of power (Faier & Rofel, 2014; Pijpers & Eriksen, 2019). The ethnographies of encounter do not adhere to a fixed definition of power but provide an explorative approach that can encompass the different power dimensions, while moving beyond a structure-agency binary. As such, they provide a basis for exploring the manifold, relational and contingent manifestations of power and agency in land systems, reminding us that power is not endogenous, nor does it flow smoothly (Tsing, 2005). Particularly, we highlight the concepts of *resistance* (Gupta & Ferguson, 1997) and *friction* (Tsing, 2005), which present apt tools for questioning neo-classical approaches to globalisation as an external force (Bestor, 2004; Ouma, 2015; Tsing, 2005) and instead highlighting the role of culture (Bestor, 2004; Freidberg, 2004) and local agency (Tsing, 2005) in global land systems. These concepts are particularly useful for LSS as they engage with global structures from the particular places, encounters and situations, where they unfold and materialise.

Resistance was already in the 1950s a key research topic within globalisation studies. Concerned with the commodification of land and labour in the liberal economy, Polanyi argued, for example, that people inevitably respond to markets with collective counter movements in order to protect society (Polanyi, 1957). In the 1970s and 1980s, Wolf studied local resistance to global trends, documenting the inequality and power asymmetries in the globalisation of land-based products and showing how hegemonic relations in the agricultural sector fuelled peasant resistance in Latin America (Wolf, 2001). Peasant struggles and resistance have indeed received substantial attention in the social sciences, often in relation to capitalist expansion (Ayres & Bosia, 2011; Beriss, 2019; Borrás et al., 2008; Edelman, 2005; Narotzky, 2016). Social movements in the agrarian sector promoting food sovereignty (Ayres & Bosia, 2011; Beriss, 2019; Borrás et al., 2008; Dunford, 2020; Leitch, 2003), along with mobilisations against GM crops (Scoones, 2008) and contestations about agricultural liberalisation (Newell, 2008), exemplify this ongoing research agenda.

We define resistance broadly, encompassing various movements, events, discourses, and actions across localities, scales and institutions that challenge existing power relations. Yet, resistance is not an antithesis to global power (Gupta & Ferguson, 1997), nor globalisation (Gills, 2004). Instead, resistance emerges in relation to existing power strategies and can potentially restructure power relations and become a power strategy itself (Gupta & Ferguson, 1997). Furthermore, an important insight coming out of the resistance literature is that multiple globalisations exist simultaneously and that resistance movements can be means of alter-globalisation (i.e. a representation and enactment of alternative visions of globalisation (Steger & Wilson, 2012)) rather than anti-globalisation (Gills, 2004). As Gills argues: *‘[E]ven so-called “resistance” to globalization is not external to the processes of globalization, not merely reactive, but very much an integral and “internal” part of the historical processes of change that we call “globalizations”’* (Gills, 2004, p. 2). An overemphasised and often romanticised focus on local resistance in disciplines such as anthropology and political geography (Brown, 1996; Li, 2014; Sparke, 2008) risks overshadowing this aspect. Combining resistance and alter-globalisation therefore enables us to capture the complex processes at stake in the ‘messy middle grounds’ (Sparke, 2008, p. 423) from where global relations emerge and unfold on particular pieces of land.

Indeed, a broader focus on the various encounters that come to shape the globalisation of land based products, including tensions and resistance, but also negotiation and consent, is emerging (Bestor, 2004; Fischer & Benson, 2006; Li, 2014; Pijpers & Eriksen, 2019; Tsing, 2005). Inspired by Tsing’s (2005) understanding of friction as the heterogeneous encounters through which global

trajectories take shape, literature highlights how globalisation is far from being a universal force that local actors merely respond to, but rather, continuously contest, negotiate and reshape (Ouma, 2015; Tsing, 2005). Regarding land, it has been shown, for example, that agricultural markets (Bestor, 2004; Ouma, 2015), resource frontiers (Li, 2014; Tsing, 2005) and value chains (Fischer & Benson, 2006; Freidberg, 2004; Tsing, 2015) are moulded by frictions or heterogeneous, fragmented and unstable encounters between actors and places in the global system. In combination, resistance, alter-globalisation and friction offer a dynamic and multi-directional approach to power relations within globalisation that opens up for exploring how places, people and the biophysical environment are embedded in, but also shape, material and immaterial flows in global land systems. This, we believe, aligns well with the focus on 'open' systems within LSS while adding a deeper engagement with different actor groups, forms of agency, alter-globalisations and power in land-use systems.

3. Methods and study area

To demonstrate the relevance of these concepts for land system research, we use the case of mining in Tanzania. We draw on secondary literature on the history of mining in Tanzania and the wider Sub-Saharan African context, along with ethnographic data from 6 months of fieldwork in the gold mining sector of Tanzania.¹ The fieldwork was conducted by the first author, between October 2018 and November 2019, with an extended visit by the second and third author in October 2019. The research design aimed to accommodate the call for more ethnographic approaches in LSS, and in particular multi-sited ethnography (Marcus, 1995) to capture both local and trans-local drivers of land-use change (Baird & Fox, 2015; Eakin et al., 2014; Friis et al., 2016; Nielsen, Hauer et al., 2019). Furthermore, multi-sited fieldwork is particularly apt for engaging a broad range of actors and places, capturing the frictional encounters that come to shape global connections (Tsing, 2015). The fieldwork consisted of three research stays, where the first author moved between regions and cities in Tanzania, including Geita Region in the Lake Victoria zone, Dar-es-Salaam, the country's commercial capital, Dodoma, the country's political capital, and Mwanza, the centre of the Lake Victoria zone (see, Figure 1). While artisanal and small-scale gold mining was the main focus of the study, it also explored large-scale mining and mineral policies more broadly.

The research engaged various actors in the extractive sector on international, national and local levels. The actors included government officials, NGOs, civil society organisations (CSOs), scholars, consultants, lawyers, engineers, miners, brokers and dealers. Semi-structured interviews ($n = 96$) served as the foundation of data collection. The interviews were structured around issues of transparency, sustainability, governance and power structures in the mining sector and specifically in the gold value chain. Forty-nine interviews were conducted in English and forty-seven in Swahili, the latter translated by a Tanzanian research assistant accompanying the first author. In addition to interviews, participant observation was conducted particularly at the artisanal and small-scale mining (ASM) sites and in the mining towns located near the large, medium, small-scale and artisanal mining operations. Local ASM meetings were attended in the Geita region, along with two national conventions on Tanzania's Extractive Industries (see, HakiRasilimali & Publish What You Pay, 2018). The vast majority of interviews were recorded and transcribed, while jotting notes were rewritten. Subsequently, all data was coded using MAXQDA.

4. Gold mining in Tanzania: the historical trajectories of a globalised production

Tanzania has been a major resource frontier for extractive industries since the 1990s. It is a country rich in minerals, including metallic minerals of gold, silver, iron and copper, and gemstones such as diamonds, tanzanite and ruby (Mutagwaba et al., 2018). Gold is a key export mineral, placing Tanzania in the top five of the gold producing countries of Africa (Poncian, 2019). The majority of



Figure 1. Map of study area.

this gold is exported to South Africa (for re-export; Schoneveld et al., 2018), India, the United Arab Emirates and Switzerland (United Nations, 2019), tying the Tanzanian gold production strongly into the global market for gold.

Artisanal gold mining was carried out by local people centuries before the colonial establishment, but with European colonialism came the first commercial mines, initiating a long history of spatially disconnected production and consumption in Tanzania (Kitula, 2006) and in Sub-Saharan Africa in general (Davenport, 2013). In the 1880s, the German administration began to mine gold in Tanzania (Kitula, 2006), followed by the British after World War I (Schoneveld et al., 2018). In Geita, the main gold mining region of Tanzania, villagers explained how the colonialists were shipping gold to the Global North, while giving little in return. *'They gave you a Fanta or a bible and you gave them gold'*, a villager explained, and continued:

'This is the word of God, take it and read it, don't waste time on gold, bring that gold to me, and we can put it in the rubbish'. They were doing this in a peaceful way, not with force, they [the villagers] were happy to get a bible and to give gold (villager in Geita).

According to a small-scale miner in Geita, this had *'tuned'* Tanzanians *'to sing the songs of the colonisers in Europe'*, merely watching while foreign investors shipped gold out of the country (see, Figure 2).

Labour and supply shortage (Kinyondo & Huggins, 2019), rising mining costs (Chimhete, 2020) and low gold prices (Chachage, 1995) caused mining activities to decline in the 1940s and 1950s and with its independence from Britain in 1961, Tanzania refrained from pursuing new mining endeavours. *'Minerals do not rot'*, argued former president Nyerere. According to him it was better to postpone mining activities until the country could acquire the financial means to mine without the assistance of foreign investment (Kinyondo & Huggins, 2019). However, as a result of structural



Figure 2. A leftover machinery from colonial mining excavations in Nyarugusu, Geita.

adjustments and liberalisation of trade (Lange, 2006), foreign direct investment (FDI) was highly prioritised from the 1990s onwards. This turn was particularly encouraged by the World Bank, suggesting that foreign mining companies would become ‘growth poles’ in Sub-Saharan Africa (Hilson, 2019). In the World Bank publication *Strategy for African Mining*, it was argued that mining should solely be owned and managed by private investors, and that state owned mining companies should be privatised ‘at the earliest opportunity’ (World Bank, 1992, pp. xiii). To attract foreign investors, the World Bank recommended that African countries charge only 1–2% in taxes (Hilson, 2019). According to a representative from a CSO in Tanzania, power asymmetries between African countries and the World Bank and the International Monetary Fund (IMF) were causing leaders to eagerly follow such recommendations:

The pressure from the World Bank has given this window of ‘if you do not conform to the development strategies we give, you are doomed’. So a lot of leaders from Africa will always be running here and there trying to please the World Bank and the IMF (civil society representative).

In Tanzania, as in 29 other countries across Sub-Saharan Africa, new policies were implemented to accommodate the World Bank’s mining strategy (Hilson, 2019). By attracting more FDI, the Tanzanian government hoped to be independent from donor aid and expected that revenues from the mining sector would amount to 10% of the country’s GDP by 2025 (Lange, 2011). With the Mining Policy of 1997 and subsequent Acts and regulations, foreign companies were allowed full ownership of mines. In exchange, they only had to pay 3% in royalties to the government and 30% of income tax. Besides that, there were no value added tax (VAT) or profit taxation, and they could freely repatriate all profit from their business (Butler, 2004; R. H. Pedersen et al., 2019). In the wake of this, more capital was flowing into the country, mainly from South African, Canadian and Australian gold companies (Lange, 2006). These companies had invested more than US\$ 1.5 billion in the sector by 2006. Between 1995 and 2005, seven large-scale gold mines were established (Lange, 2006). These were located mainly in the Northern parts of Tanzania in the regions of Mwanza (Geita²), Tabora, Mara, Manyara and Shinyanga. As the mining concessions covered land that was already in use, villagers, artisanal and small-scale miners and other land users were displaced and poorly compensated (Lange, 2008). With the establishment of the large-scale mines, the gold production rose from only

100 kg in the 1980s to 45 tonnes by 2003, and the export earnings of mining grew from US\$ 29.7 million in 1996 to US\$ 553 million by 2003 (Lange, 2006, 2011). In the financial year of 2019/2020, 53.7 tonnes of gold were produced in Tanzania (The United Republic of Tanzania, 2021b). Today, the mining sector continues to be dominated by South African, Canadian and Australian investors, though Chinese investors have also entered the market and hold large concessions (The United Republic of Tanzania, 2021a).

5. Mining as a contested land use: power asymmetries and frictional encounters

Generally, the amount of land used for mining activities in Sub-Saharan Africa increased with 58% between 2000 and 2018 and is currently measured to be 3,055 km² (Ahmed et al., 2021). Consequently, land which might otherwise have been used for farming, forestry and livestock rearing has increasingly been encroached upon by mining activities (Bluwstein et al., 2018; Kitula, 2006). Furthermore, large exploration concessions have been allocated to mining companies. In Tanzania, an estimated area of 140,000 km² is allocated for prospect licenses and exploration. This corresponds to 15% of Tanzania's terrestrial land (Bluwstein et al., 2018). Similar trends are visible in other Sub-Saharan countries. In Ghana, the largest gold producer in Africa, approximately one quarter of the country's land is reserved for mining reconnaissance, exploration and extraction. In the Democratic Republic of Congo, multinational mining companies also hold large land concessions, including OKIMO Gold Mine, a joint venture between the Congolese state and the company AngloGold Ashanti, who hold the exclusive rights to an area of 83,000 km² (Hilson, 2019), almost equivalent to the size of Austria.

As a land use, mining is particularly linked to contestation (Lange, 2008). In Tanzania, sub-surface resource rights precede surface land rights, and from the late 1990s onwards, conflicts over land have emerged between local communities and investors (Pedersen & Jacob, 2017). Similar developments are seen elsewhere in Sub-Saharan Africa, where mining rights erode or legally precede customary land rights (Mitchell, 2016). In Geita, this resulted in frictional encounters between foreign and national investors, and the artisanal and small-scale miners. Several interviewees recalled incidents during the past decade where policemen had forcefully evicted them from mining sites, resulting in violent clashes. Most often, the artisanal and small-scale miners were the ones discovering new deposits, but since they did not have a license for the area, investors and other powerful actors would come, strike a deal with the local government officials, obtain the mining rights and evict all other land users.

In 2012, in a place here in Nyarugusu, gold was discovered by the small miners. Small miners are the ones who discovered those places and they started working there and immediately, a rich person came to the area because of the high production. He came with policemen and made the police guard the area and forcefully remove the small miners. Even the mining officers were the ones who supported the rich person because he gave them a share and some money (artisanal miner from Geita).

These displacements were driven by national, as well as international, actors, and were, according to many artisanal and small-scale miners, exacerbating inequality: *'the poor would be forced to move away to let the rich ones keep on mining'*, a miner stated. Also, villagers and other land users were displaced due to mining investments, despite having land tenure rights. *'People were being pushed out without compensation even though the law says that you have to pay them compensation, but it wasn't being followed'*, a lawyer explained. This, he continued, has caused public dissent: *'People started to make noise and journalists started to write about these issues'*.

While the rights to land and resources were becoming increasingly contested in Tanzania, it was also becoming clear that large-scale mining has not become 'growth poles' as the World Bank anticipated. These industries have not contributed much to revenue collection nor created local linkages, as most suppliers and refiners are found outside the host countries. Furthermore, they generate only little employment (Hilson, 2019). A general dissatisfaction with the international trade

agreements in the mining sector of Tanzania has consequently emerged and people are telling the same story that scholars have been highlighting for decades (Appel, 2019; Le Billon, 2005; Ferguson, 2005; Hilson, 2019; Watts, 2004): the extractive industries are not sufficiently benefitting the people of Africa, including Tanzania. The country is rich in resources, 'but where is the money?' artisanal and small-scale miners, civil society organisations (CSOs) and NGOs were asking.

The former president said that the investment in gold will eradicate poverty. But don't we still have poverty? Then it was gas. We all thought that we would be living in the country of milk and honey. Why are we not? (Speaker at the Tanzania Extractive Industries Conference 2018).

Generally, the stakeholders we interviewed agreed that the benefits from mineral resources are not 'trickling down'. This is also seen in the Geita Region, the main gold mining region in the country and host of Tanzania's largest gold mine, Geita Gold Mine (Figure 3), which covers an area of 220 km² (Hilson, 2019). Around Geita Gold Mine, artisanal and small-scale mining (ASM) activities are carried out by Tanzanians, and Geita town has expanded rapidly in the past decades. The infrastructure has also improved with tarmac roads and tap water. Despite such improvements, Geita continues to be a region with much poverty.

When people think of mining, they know that a lot of money is being circulated and they know there are a lot of money up here. But then when they come here, they are surprised that people here are poor (small-scale miner in Geita).

Across scales and institutions, interviewees gave similar explanations to this paradox: 'foreigners steal resources', 'gold is taken outside the country', 'previously, government officials were corrupt and making bad deals with foreign companies' and 'we have not been aware of the value of our resources'.

According to our interviewees, the government has for many years been 'ill-prepared', not knowing 'the rules of the game' when dealing with foreign investors. This has resulted in unequal negotiations where Tanzania did not have the capacity to bargain, but merely would reply with 'yes, Mr. Investor, come and help me'. A mining engineer argued that Tanzania was situated between global forces such as China, India, Russia and Western countries, all competing for more resources.



Figure 3. Geita Gold Mine.

'They utilise the poverty-stricken Africa and they put their own factories in the resource rich areas and play out their competition. Nobody cares about the ground level'. According to him, 'bad people from abroad' are not interested in Tanzania becoming developed, as they profited from Tanzanians 'being ignorant'.

Although most interviewees agreed that Tanzania had not benefitted sufficiently from foreign investments in the mining sector, they also described how Tanzania rely on foreign investors: 'we need technology', 'we need expertise' and 'we need investors', were statements that were repeated during interviews. *'We depend on the outside world'*, a government official concluded. Consequently, how to deal with this uneasy dependency of powerful transnational actors is a highly debated issue.

The historical trajectories of gold mining illustrate how the development in the extractive sector is shaped by power asymmetries between the government, the people, foreign investors and the World Bank. But it is not without frictions, conflicts and dissent as land is reallocated to foreign investors at the expense of local livelihoods. Conflicts and negotiations over displacement and compensation have led to tensions between state actors, local land users and foreign companies. Frictions also emerge as journalists, CSOs and NGOs begin to highlight the discrepancy between the high mineral production and the low economic development in Tanzania: by putting pressure on the government, they have contributed to the emergent trend of resource nationalism that challenges the existing trade connections in the extractive sector.

6. The rise of resource nationalism: resisting transnational connections

After an era of economic liberalisation in the 1990s and early 2000s under president Mkapa, the resource policies changed in the late 2000s.³ In 2005, Kikwete was elected president, and during the late 2000s new agendas and reforms were made towards more state control in the extractive sector. While the World Bank continues to highlight large-scale mining as an important development strategy in Sub-Saharan Africa, it also acknowledges the importance of creating more local linkages in mining (Hilson, 2019). The latter was also reflected in the new mineral policies of Tanzania. The Mining Act of 2010 aimed to increase the sector's contribution to the GDP and improve the rights of artisanal and small-scale miners and customary land users. Tanzania Minerals Audit Agency was established and the tax and royalty requirements from multi-national companies (MNCs) were raised (Pedersen & Jacob, 2017). The resource nationalist agenda was further intensified under president Magufuli through a political shift towards a more domestically controlled extractive sector, less dependence on FDI (Jacob & Pedersen, 2018; Kinyondo & Huggins, 2019) and an enhanced focus on public revenue (R. H. Pedersen et al., 2019). *'We are building a society, a country of our own so we do not depend on others from outside to build it'*, a government official explained. According to a CSO representative, the government is finally acknowledging the injustice that the public has been concerned with for years.

The government used to say that we are noise makers in terms of trying to advocate for transparency, for the government to benefit more from this sector. They were saying that the sector is okay, there is nothing wrong with it, you are noise makers, you are anti-development and so forth. But recently when the new government came in place, they say we have been plundered by the big companies (CSO representative).

Resource nationalism is framed by government officials as a way to ensure that the country's resources will benefit its people. In an interview, a journalist explained that resource nationalism is generally considered a positive term by the people, showing the government's support to its citizens.

The turn towards resource nationalism has resulted in new legislations, particularly the 2017 Acts and Amendments that revise existing LSM contracts (see, Poncian, 2019; The Written Laws (Miscellaneous Amendments) Act, 2017). These amendments give the Parliament the right to review international mining contracts, prioritise Tanzanian investors, ban export of raw gemstones and

diamonds, reject international interference in disputes between MNCs and the state and raise the mineral royalties along with the minimum requirement of state shares in mining projects (see, R. H. Pedersen et al., 2019; The Written Laws (Miscellaneous Amendments) Act, 2017).

Along with the new legislation, President Magufuli declared that Tanzania was in an economic war with foreign mining companies, causing disputes to arise between the Tanzanian government and MNCs over tax claims (Roder, 2019). This resulted in the government issuing a fine of US\$ 190 billion in 2017 to the gold mining company Acacia Mining for alleged tax evasion. Furthermore, the government imprisoned three employees from Acacia Mining (Arbucias, 2020). Consequently, Acacia Mining's stock prices fell rapidly, and it was subsequently bought by the company Barrick Gold. A deal between the government and Barrick Gold was reached in 2019, requiring Acacia Mining to pay US\$ 300 million to the government in tax claims and assign 50% of its shares to the government (Reuters, 2019).

Along with renegotiating mining contracts, value addition is considered a key strategy to ensure more benefits from the extractive industries. Due to lack of technology and expertise, Tanzania has been exporting raw materials, unable to add value to their products.

We export our raw materials and import things manufactured by the same materials. I am not talking about exporting Tungsten and getting a phone, I am talking about exporting raw gemstones and importing polished jewellery (mining engineer in Geita).

New refineries were being constructed at the time of fieldwork and government officials hoped that by refining gold and ensuring its purity, it could be bought by the Bank of Tanzania to build a national reserve and thus stabilise the currency. *'For the government to be able to say that they are economically stable, it is the amount of gold that you have in your bank. In Tanzania we don't have that, we are now starting'*, a government official explained. This means that the Bank of Tanzania is now given first priority: *'when they say that they have enough, then someone is allowed to export'*.

Besides establishing refineries and national gold reserves, the government is promoting ASM as part of the resource nationalist agenda. Among the majority of stakeholders interviewed, it is an established fact that the money from ASM is contributing to the local development considerably more than large-scale mining (LSM). *'Any little development you see in these areas do not come from large-scale miners'*, a CSO representative explained. In ASM, he continued: *'there is a lot that trickles back into the communities'*. By promoting ASM, the government hopes to attract more local investment.

We have to improve the small-scale miners because they are employing the right group of people and of course, if our people get into mining, whatever they get, I don't think they are going to invest in Europe. No way. They are going to invest in their communities. So we are going to see the effect of the local content (Government official).

With the turn towards resource nationalism, the government is confiscating prospecting licenses from LSM companies and re-allocating the land for ASM activities (Poncian, 2019). Moreover, new trade infrastructures are being introduced in the ASM sector as the government aims to integrate it in the formal economy. This includes 28 mineral markets that were introduced in 2019 to ensure that ASM actors trade minerals in a formal setting, audited by government officials. Among the artisanal and small-scale miners in Geita, the political shift is mainly appreciated and considered an opportunity for a more just sector. Several miners argued that they now feel recognised and supported. *'Now everyone is equal'*, *'Now it is a free business sector'* and *'now there is no more harassment'*, miners explained. However, more critical voices were also encountered, particularly by artisanal miners and CSOs. One issue pertains to the government's limited definition of a small-scale miner as the owner of a mining license. Consequently, their efforts to formalise and support small-scale miners are only targeting claim holders. The problem is, however, that claim holders constitute a small minority of the millions of people dependent on the sector. This makes artisanal miners question the new support measures, asking how the government would formalise the 70% of ASM actors who are not

claim holders (see, A. F. Pedersen et al., 2021). CSO representatives similarly questioned the intentions behind these measures: *'who are they targeting? Are they really targeting artisanal and small-scale miners or are they actually aiming at producing or reproducing another genre of mining actors in Tanzania, which are medium-scale miners?'*

According to a government official, empowering claim holders will naturally benefit all ASM actors, as the financial support will 'trickle down'. Likewise, government officials argued that the revenue collection from the mineral sector will be for the benefit of 'all Tanzanians'. This however, is also something people in Geita questioned, stating the fact that the region continues to be poor, despite its mineral wealth. According to a local gold dealer, it is only fair if the revenues from the mining sector remain in the mining areas. *'Our road is very rough, it is not a smooth road like in town, and here is the place where the gold comes from. Even water, there is no water or electricity like in other places'*. This debate reveals how 'the local' and 'the local economy' have multiple understandings in Tanzania. While the resource nationalist agenda aims to benefit Tanzanians by redirecting the financial flows from the sector, it remains unclear to whom, what and where these benefits would actually flow.

The emergence of resource nationalism in Tanzania illustrates the importance of paying attention to the alternative visions of globalisation that arise in the wake of dissent, conflict and disappointment. Such visions do not only emerge on a national scale, but also locally, revealing the multiple and frictional negotiations of harms and benefits that transpire across scales and actor groups. The resource nationalist agenda does not entail a full withdrawal from the global gold market, but a reimagining and redirection of the power to control who benefits from the financial and material flows embedded in gold mining. This alter-globalisation of the mining sector in Tanzania has direct implication for land use and land rights, as the government is redistributing exploration licenses and redirecting their attention away from large-scale mining investments towards the possibilities of a formalised small-scale mining sector.

7. Towards a deeper engagement with friction and resistance in land system science

Land system science (LSS) has made great strides towards understanding the multidirectional and complex global connections that tie land-use and land-cover change to distant places and people, and creating unforeseen and often harmful social, environmental and economic outcomes (Friis & Nielsen, 2019; Niewöhner et al., 2016). As LSS strives to contribute to designing solutions for global land-use challenges, it becomes increasingly important to recognise that land-use change entails 'wicked' problems consisting of multiple dimensions, competing needs and different interests that inevitably require trade-offs and negotiations (DeFries & Nagendra, 2017; Meyfroidt, 2018; Nielsen, Bremond et al., 2019).

The ethnographies of encounter (Faier & Rofel, 2014; Tsing, 2005) are, in our opinion, particularly useful in this respect, as they offer a way to encompass different power approaches and move beyond structure-agency and global-local binaries. Actors at various scales position themselves in trans-local relations, reshaping as well as resisting these (Ayres & Bosia, 2011; Nevins & Peluso, 2018b; Ouma, 2015; Tsing, 2005). In Tanzania's gold mining sector, actors in different positions, from artisanal and small-scale miners to villagers, policy makers, CSOs and NGOs, as well as powerful international development organisations and foreign investors, engage in the dynamic power relations, shifting agendas and frictional visions of 'how benefits and harms are distributed' (Koch & Perreault, 2019, p. 612).

This creates frictions (Tsing, 2005) between places and actors in land system, and results in global connections that might be hard to model, explain or predict. Frictions do not emerge in a vacuum, but are often deeply rooted in history (Faier & Rofel, 2014; Tsing, 2005). In Tanzania's gold sector, frictions emerge between promises and expectations, wealth and poverty, dependence and independence, inclusion and exclusion, formality and informality, exploitation and resistance. These take place on different scales; conflicts over land arose in the encounters between local communities and

foreign investors, and issues of corruption created frictions between local Tanzanians and the government, leading to distrust and dissent. Citizens began to question the abilities of the government and the intentions of the multinational companies as mining investments did not benefit the people as expected and often turned out harmful for local communities. NGOs, CSOs and journalists channelled local protests, highlighting the asymmetries in land rights and access, mineral export and national development. Doing so, they contested the trade flows in the extractive sector and created frictions by pressuring the government to renegotiate, thus fuelling the resource nationalist movement. These frictions heavily impacted foreign investors and multinational gold companies too. This was seen in the dispute between the government and Acacia Mining, which impacted the company's stock prices and caused it to withdraw from Tanzania.

Our results also illustrate that resistance and frictions within the mining sector cannot only be seen as in opposition to power (Gupta & Ferguson, 1997) and globalisation (Gills, 2004). Rather, actors within Tanzania try to engage in, not oppose, the global mining sector on their own terms. The Tanzanian government's shift towards reviewing international mining contracts, focusing on value additions, constructing refineries, building gold reserves, reallocating land and supporting the artisanal and small-scale mining (ASM) sector, illustrates that resource nationalism (Arbucias, 2020; Kohl & Farthing, 2012; Rosales, 2020) is not simply a matter of anti-globalisation but rather a form of alter-globalisation. There is not one but several competing 'globalisations' at play (Gills, 2004). Resource nationalism in Tanzania, like elsewhere (Wilson, 2015), is not intended to nationalise the extractive industries completely, nor to end neoliberal extractivism, but rather to renegotiate the global terms of extractivism (Poncian, 2019). This exemplifies that power relations are not stable or unidirectional in global land use systems (Faier & Rofel, 2014) and that multiple actors engage in practices of global ordering (Coleman & Tucker, 2011). Yet, it also shows that global ordering is frictional as rights are negotiated and contested among actors across scale, including local actors. In our study, this was demonstrated in the contestation over who and what were included and excluded in 'the local' and the 'small-scale', and what that meant for how benefits are distributed and how land is being controlled and used.

These discussions highlight the scalar political dimensions of land use, along with the multiple, often frictional, interests at stake in shaping alter-globalisations. Furthermore, they question the neoclassical presumptions that underpin LSS, where scales are approached as nested entities, 'the local' being endogenous and the global being a universal force operating outside of the local (Munroe et al., 2014). In Tanzania, trans-local mining connections emerged from colonial encounters, were reinforced through neo-liberal trade policies and then later contested by a broad range of actors, working across scales. Following the historical trajectories of mining encounters with a focus on resistance and alter-globalisation challenge the neoclassical understanding of globalisation as a unidirectional, universal process 'hitting' the local. As other LSS studies have also argued, power does not just flow one way (Friis et al., 2016; Munroe et al., 2014).

Although power is multi-directional, it is, however, not equally distributed. As such, there is a need for identifying the different agendas and power dynamics within and across scales: who sets the agenda for particular land activities and what are the alternative options for the actors involved? Posing these questions are necessary for identifying the winners and losers of land-use change. The hegemonic relations that shape land-use policies and practices worldwide, including in Tanzania, also challenge another neoclassical presumption, namely that the economic sphere is distinct from the social and solely based on market rationalities (Munroe et al., 2014). As we, and others (Andersen et al., 2016; Li, 2014; Tsing, 2005), have shown, this is not the case. Trade, investment and profit distribution in land systems are deeply embedded in colonial legacies, power asymmetries, resistance and politics, engaging a broad range of actors beyond producers and consumers.

Overall, our study shows how LSS research with a focus on resistance, frictions and alter-globalisations and by extension, agency and ultimately power, can bring important new dimensions to the study of global connectivity in land-use change. Together, these concepts enable a deeper engagement with how multidirectional power relations mould global connections and shape land

systems. In addition to benefitting the emerging agenda within LSS on solution oriented research for sustainability (Nielsen, Bremond et al., 2019; Verburg et al., 2015), our results show how an engagement with friction and resistance can reveal flows that are harmful or unprofitable, exacerbate inequality or disempower certain actors, and how those impacts might shift over time. Likewise, an engagement with friction and resistance can help identify alter-globalisations that are based on other forms of agency, knowledge, needs and visions and that might present options for more sustainable land systems. In the case of mining in Tanzania, a focus on resource nationalism as resistance identified the involved and affected actors in the land system, from artisanal and small-scale miners, villagers, CSOs, NGOs and politicians to multinational arrangements, institutions and companies. Furthermore, the fluid power relations between actors were revealed, as journalists, CSOs and eventually the government began to question and renegotiate the hegemonic relations and unequal exchanges that have characterised the large-scale mining sector in Sub-Saharan Africa since the colonial era.

While the ethnographies of encounter bridge different power conceptualisations, they do so without aligning these. Empirically as well as conceptually, different aspects and understandings of power co-exist, allowing for frictions and contradictions within these to unfold and be explored. As such, a focus on 'encounters' might also capture the conceptual frictions between different approaches to power within LSS. We do therefore not suggest for the ethnographies of encounter to resolve all the challenges for capturing power and agency in LSS. Indeed, there is a need for multiple approaches to power relations in LSS to not lose '*sight of the material and ecological components of the dynamics*' (Niewöhner, Bruns et al., 2016, p. 6). In other words, there is need for understanding the multiple ways in which power relations at all scales shape trade flows, governance structures and land-use dynamics, along with the ecological implications. These components cannot be captured through one conceptualisation of power or through ethnography alone, but necessitate an engagement with other strands of LSS research. An agonistic and indeed frictional approach to the different understandings of power and agency embedded in LSS can help deepen the engagement with power and agency, exploring and discussing their manifold dimensions and expressions (Niewöhner, Bruns et al., 2016).

8. Conclusion

For the last two decades, LSS has been occupied with the globalisation of land-based products and its socio-environmental impacts. To understand this process, land-use systems are increasingly approached as globalised systems with drivers and impacts that transgress national and regional borders. Additionally, LSS scholars have turned towards the social sciences, asking how these can help explain why and how global land-use changes emerge. Often, globalised land systems are seen to exacerbate inequality, aggravate land related conflicts and produce new winners and losers. Consequently, it has been argued that more focus on agency, power relations and resistance can move LSS towards a deeper engagement with the social dimensions of land use change. We have accommodated this research agenda by engaging the concepts of friction and resistance as a lens for exploring how power and agency play out in global land systems. To illustrate this, we followed the historical trajectories of mining in Tanzania, highlighting power asymmetries, exploitative relations, public dissent, conflicts over land and emergent resource nationalism. We showed how frictions and resistance arise in encounters between actors, visions and agendas and come to shape global connections as well as local livelihoods in the mining sector. We argued that a deeper engagement with resistance, friction and alter-globalisations can help identify the winners and losers of globalised land systems and break with the neo-classical idea of globalisation as an external force. Moreover, it enables an engagement with a broader range of concerned actors, shedding light on the contested visions, desires and agendas. When moving towards a solution oriented research agenda for sustainability, it is ever more important to identify the competing agendas and interests at play,

along with the trade-offs and potentials embedded in the wicked problems that LSS aims to solve. This requires close attention to the contested visions and alter-globalisations that unfold through the, albeit sometimes subtle, frictions and resistance movements in globalised land systems.

Notes

1. The fieldwork has been carried out with a research permit from Tanzania Commission for Science and Technology and has been approved by the Ethics Committee of the Faculty of Mathematics and Natural Sciences, Humboldt-Universität zu Berlin. All participants have given informed consent.
2. Geita became a region in 2012. Prior to this, it was a district in Mwanza Region.
3. Since 1977, Tanzania has been governed by the same political party, Chama cha Mapinduzi (CCM; Pallotti, 2017). Policies have, however, changed during this time, often along with the inauguration of new presidents (Jacob & Pedersen, 2018). Since independence in 1961, Tanzania has been ruled by six different presidents.

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